

AMENDMENTS TO THE SPECIFICATION

Please replace paragraph numbered [0001] with the following paragraph:

[0001] The present invention relates generally to the transport of containers on a crane between land-based delivery and dockside sea vessel pick-up locations.

Please replace paragraph numbered [0004] with the following paragraph:

[0004] Current facilities for transport of containers between land and ships involve large marine terminal cranes, which typically embody one trolley traveling along the length of a boom for pick-up and delivery of the containers. While such cranes may be adequate for low demand at small scale sea ports, at larger ports such cranes are a disrupting bottleneck to terminal activities, which call for additional equipment and cranes to avoid delays in port traffic and container transfer. It is therefore an important object of the present invention to provide for a more efficient less costly and less time-consuming transfer of containers from land-based trucks to dock-side ships through the aforementioned type of marine terminal crane.

Please replace paragraph numbered [0005] with the following paragraph:

[0005] The present invention is related to the invention covered in a related copending application, Serial No. 10/758,560, filed January 16, 2004. The inventions disclosed in both applications ~~inventions involves~~ involve use of a single crane through which repeated cycles of two simultaneously functioning trolleys may be moved along fixed paths on a boom. Pursuant to the present invention each of the trolleys is also moved along one of two parallel spaced straight rail

paths on a platform that is laterally displaced in a direction perpendicular to a fixed path on the boom ~~switched~~ for either straight-through transit of the trolley or lateral transfer thereof between fixed boom ~~aligned~~ rail paths so as to accommodate transfer of each trolley between the such aligned fixed boom paths and either one of two loading and unloading positions under a central crane structure ~~between the boom paths~~. One of the trolleys may thereby be cyclically emptied or loaded from one end of the boom, while the other trolley is either loaded with a container or emptied at one of the two positions underlying the platform.

Please replace paragraph numbered [0012] with the following paragraph:

[0012] Referring now to the drawing in detail, FIGS. 1 and 2 illustrate a multi-rail crane 10 adapted to be moved to a position for transfer of standard containers, such as a container 12 between pick-up and delivery locations respectively disposed on such as a land-based pier 14 and dockside sea vessels 16. The crane 10 has a support frame 18 embodying four vertical gantry legs 20 interconnected in spaced relation to each other so as to support on their upper ends a rectangular central structure 22 in a horizontal position. An elongated boom 24 extends horizontally from the central ~~structure structural~~ 22 over the sea vessel 16. Opposite ends 26 and 28 of the boom 24 are spaced from the central structure 22 by different amounts. The boom end 26 is spaced a sufficient distance from the central structure 22 so as to accommodate container delivery thereat onto the sea vessel 16 when the crane 10 is appropriately positioned on the pier 14 by motorized wheel assemblies 30 at the lower ends of the crane gantry legs 20. Support

cables 32 attached to the top of an anchor 33 fixed to the central structure 22 maintains the boom 24 in its horizontal position by connection of the lower ends of the cables 32 to the boom 24 adjacent to its opposite ends 26 and 28.

Please replace paragraph numbered [0013] with the following paragraph:

[0013] The container 12 is suspended below the boom 24 by a spreader bar 48 ~~below the boom 24~~ from one trolley 34 as shown in FIG. 1 so as to undergo ~~for~~ travel along a fixed rail path on the underside of the boom 24 between its end 26 and the central structure 22 as shown by dotted line in FIG. 3. A second container 36 is suspended by a spreader bar 48 below the central structure 22 from a second trolley 37 mounted below a platform 40 as shown in FIGS. 3 and 6 performing a lateral switching function as hereinafter explained.

Please replace paragraph numbered [0014] with the following paragraph:

[0014] ~~The As shown in FIGS. 3 and 6, the~~ platform 40 as shown in FIGS. 3 and 6 is mounted below the central structure 22 on a trolley 53 supported on a pair of tracks 54, with fixed ~~to the underside of the structure 22 to expose the~~ platform 40 ~~exposed~~ below the structure 22. The platform 40 is moved laterally relative to the boom 24 on the underside of the central structure 22 by a the trolley 53 attached to the platform 40. Such lateral movement of the platform 40 by its trolley 53 is guided along the tracks 54 mounted on the central structure 22. Two pairs of tracks 42 and 44 are formed on the underside of the platform 40 as shown in FIG. 3 to establish a pair of parallel spaced straight trolley travel paths which are alternatively aligned, by lateral movement of the platform 40 along the tracks 54, with a fixed travel path established

along the underside of the boom 24 by ~~fixed~~ aligned boom tracks 46 fixed thereto and the fixed tracks 52 ~~on~~ fixed to the central structure 22. The trolleys 34 and 37 are respectively guided for movement along the tracks 46 on the boom 24, the tracks 42 or 44 on the platform 40 and the fixed tracks 52 on the central structure 22 as shown in FIGS. 3, 4 and 5. The spreader bars 48 respectively suspend the containers 12 and 36 from the trolleys 34 and 37. When either one of the platform tracks 42 and 44 is aligned with the fixed boom tracks 46 as shown in FIG. 3, the trolley 34 or 37 with its spreader bar 48 may be switched between the boom tracks 46 and the platform tracks 42 or 44 so as to thereby transfer the container 12 or 36 between the underside fixed travel paths on the boom 24 and tracks positioned on the central structure 22 as hereinafter explained.

Please replace paragraph numbered [0015] with the following paragraph:

[0015] The multi-rail crane 10 as hereinbefore described utilizes the two trolleys 34 and 37 in alternating fashion on a single set of the tracks 46 on the boom 24 which is of standard size and weight. The platform trolley 53 provides motorized switching of the platform 40 to provide selective use of the two sets of tracks 42 and 44 thereon laterally spaced from each other in a side by side fashion. The two trolleys 34 and 37 may thereby be operated in unison to provide for more efficient crane delivery. While one of the trolleys 34 or 37 is at a land-side location under the central structure 22 for pick-up of the container 12 or 36, the other of the trolleys 34 or 37 may be at the boom end 26 for dropping off the container 12 or 36 onto the cargo hold of the ship 16. The emptied trolley 34 or 37 then rotates the spreader bar 48 suspended therefrom by 90° in a counter-clockwise direction and moves back to the switching platform 40 onto the

platform tracks 44. Once the emptied trolley 34 or 37 is on the platform 40, platform switching is effected by lateral movement of a the platform trolley 53 on the platform 40 as shown in FIG. 6 along tracks 54 on the underside of the central structure 22, to the position shown in FIG. 3, with the other pair of the platform tracks 42 aligned with the tracks 52 on the central structure 22. The other fully loaded trolley 34 or 37 then has a cleared main rail path toward the boom end 26 along the tracks 52, 42 and 46 for delivery of the container 12 or 36 to the ship 16. After the loaded trolley 34 or 37 passes the platform 40, the emptied trolley 34 or 37 laterally spaced from such main rail path rotates the spreader bar 48 or 49 suspended therefrom clockwise by 90° and proceeds to pick up a container 36. Trolleys and containers would then be positioned as shown in FIGS. 1, 3 and 4. The trolley 34 by delivery of the container 12 at the boom end 26 is emptied and begins its movement back toward the platform 40, while the spreader bar 48 suspended therefrom is again rotated 90° counter-clockwise, so that the trolley 34 may easily pass by the loaded trolley 37 along the platform tracks 42, without stopping on the platform 40 to await switching, and continue to move inland onto the fixed pair of tracks 52 to thereby facilitate movement of trucks 50 along two traffic lanes as shown in FIG. 1 below the crane 10. Since there are two distinct locations for container transfer below the central structure 22 of the crane 10, utilizing the two lanes of traffic for the trucks 50 decreases truck waiting time and increases truck transfer efficiency. Once the trolley 34 has been moved onto the fixed tracks 52, it rotates the spreader bar 48 suspended therefrom by 90° clockwise before the platform 40 is laterally switched back to its position aligning the platform tracks 44 with the boom tracks 46 so as to allow the loaded trolley 37 to deliver the container 36 to the ship 16. The trolleys 34 and 37 are then back in their original position from which a complete transfer process may be repeated.